CMSC 838G
New Devices for New Interactions

François Guimbretière
CSI 2107 Tue-Thu 3:30-4:45
Why new devices?

• PostBrainstorm
  – UIST’01 video
• Proof-reading tool
  – Kevin’s Video
Example of innovative redesigns

• Can we improve the clothespin?
  – Ekco’s solution

• Can we improve the stapler?
  – Orca’s mini-stapler

• Can we improve the sport watch?
  – Nike’s

• Can we improve the mouse?
  – Evoluent’s vertical mouse.
A convenient telephone/watch?
Vision of the future

Connected products (IDEO vision in ‘00)
CMSC 838G Administrivia

• Instructor
  – François Guimbretière

• Human computer interaction
  – Large interactive surfaces
  – Information Visualization

• Office hours (Room 3267 AVW):
  – Tue/Thu 2:00pm – 3:00pm
  – or by email any time: francois@cs.umd.edu
  – or by appointment
Student info

• Name, e-mail

• Are you taking the class for credit?
  – Comps?

• Why are you taking the class?
  – Goals
  – Topics you would like to be covered in the class

• Background?
  – EE?
  – ME?

• Additional comments
Work load

• Reading
  – Textbooks and papers
  – ~ 1-2 papers per class

• In class presentation and discussion
  – Project presentations
  – Heavy participation is expected

• “Homework”
  – More like practice run before the project

• Project
  – 1 project, 3 checkpoints
  – Project proposal due Feb 12
What you will learn

• New devices
  – Basic design principle
  – How to use CAD and rapid prototyping tools
  – Hands on toward creating hardware prototypes

• Theory
  – Interaction models
  – Human performances
  – Interaction models

• Experimental design
  – User study fundamentals
  – Basic experimental designs
  – Non-traditional experimental designs
  – Interpretation of experimental results
Resources available

- **CAD**
  - Rhino NURBS base CAD software
  - MicroScribe measurement arm

- **3D printing**
  - ZPrinter 310

- **Hardware on a per project basis**
  - PIC micro-controller
  - Devices to be transformed
How you will be evaluated

• Participation (include HW): 10%
• In class presentation: 20%
• Project: 50%
• Final 20%
Texts

• Required text
  – *Human Input to Computer Systems: Theories, Techniques and Technology*, Buxton, draft available online

• Course web sites:
Reading for Next Week

• Buxton: Chapter 1 & 2
• MediaBlock [Ullmer et al. Siggraph'98]
• DiamondTouch [Dietz et al.]
  – We have one!
• DataTiles [Rekimoto et al, CHI'01]